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10/525,702	12/20/2005	David Hone	4115-178	4972

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EXAMINER	
KINSEY, NICOLE	
ART UNIT	**PAPER NUMBER**
1648	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,702	HONE, DAVID	
	Examiner	Art Unit	
	Nicole E. Kinsey, Ph.D.	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30,40-42,62,63 and 79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30,40-42,62,63 and 79* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The restriction mailed February 9, 2007 required applicant to elect either foreign or endogenous immunogens. Applicant was further required to elect a sub-species from claim 13 if group I was elected **OR** a sub-species from claim 17 if group II was elected. Applicants elected viral proteins from claim 13. Therefore, applicant's additional election of cellular proteins from claim 17 will not be considered at this time.

Status of Claims

Currently, claims 1-30,40-42,62,63 and 79 are pending.

Withdrawn Rejection

The rejection of claims 62-63 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is withdrawn. The specification is enabling for a method for inducing an immune response.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of claims 40-42 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is maintained. The claims contains subject

matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Enablement is considered in view of the Wands factors (MPEP 2164.01(a)).

A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

Nature of the invention. The claims are drawn to a method of vaccination comprising administering the claimed rdsRP to a subject. Thus, the claims encompass the prevention of diseases by administering a vaccine.

State of the Art. The instant invention is drawn to a method of vaccination comprising administering a rdsRP to a subject. The term "vaccine", by definition, implies a preparation intended for active immunological prophylaxis; e.g., preparations of killed microbes of virulent strains or living microbes of attenuated (variant or mutant) strains; or microbial, fungal, plant, protozoa, or metazoan derivatives or products. Prophylaxis is defined as the prevention of disease or of a process that can lead to disease. Although nearly any protein when inoculated can cause an immune reaction, the prophylactic nature of this reaction is not guaranteed and has to be experimentally determined.

Guidance in the Specification. The claimed invention is directed to a method for vaccination by administering to a subject a rdsRP. The method is not strictly limited to *in vitro* treatments and encompasses treating human subjects *in vivo*. There is insufficient disclosure to reasonably predict that the methods and compositions of the instant specification would prevent a disease after vaccination. Applicants have only described methods for making the rdsRP and provide prophetic examples (see Examples 8-11) describing the *in vitro* infection of dendritic cells and the *in vivo* vaccination of mice. There is no guidance or description for vaccinating subjects or showing an art recognized correlation between any *in vitro* data and the scope of the claimed invention. Thus, one is left with speculation and an invitation to experiment.

Working Examples. There are only prophetic examples (see Examples 8-11) describing the *in vitro* infection of dendritic cells and the *in vivo* vaccination of mice. There is no working example disclosed in the specification demonstrating the vaccination of a subject with rdsRP and prevention of a disease following vaccination.

In view of the lack of guidance, objective evidence, and predictability in the specification, it would require undue experimentation by one of ordinary skill in the art to practice the claimed invention.

The instant invention, based on the evidence as a whole, in light of the factors articulated by the court in *In re Wands*, lacks an enabling disclosure.

Response to Arguments

Applicants argue that pages 19-21 of the specification discuss in detail how the rdsRP can be administered to dendritic cells *in vitro*, how rdsRP vaccines are formulated, how rdsRP vaccines are administered to animal tissues and how rdsRP are orally administered. Applicants further argue that while examples 8-11 are prophetic, these examples provide detailed direction to one of skill in the art with regard to infection of human dendritic cells (Example 8), immunogenicity of rdsRP vaccine in mice (Example 9), measurement of immune responses (Example 10), and vaccination protocol discrimination criteria (Example 11). Finally applicants conclude that one of skill in the art would have combined the teachings of human dendritic cells *in vitro* with the *in vivo* mouse vaccinations and would have found the combination to be reasonably predictive of the efficacy of the claimed methods of vaccination and inducing an immune response or biological activity. This is not found persuasive.

As discussed above, applicants are claiming a vaccine, which by definition, implies a preparation intended for active immunological prophylaxis against an antigen(s). Applicants have not shown that the "vaccine" provides a vaccinated subject any protection against any antigen. Furthermore, applicants have not shown *in vitro* infection of cells or *in vitro* activation of immune cells against the expressed antigen or a correlation between the *in vitro* data and *in vivo* protection. Applicants have not provided any examples or any guidance for making and using a vaccine that provides immunological prophylaxis against an antigen. Applicants' prophetic examples do not provide guidance with regard to whether or not the antigen in the context of a dsRNA is

properly expressed in a host, is properly presented on antigen presenting cells, activates immune cells, causes the production of antibodies or cytotoxic T cell responses to the expressed antigen, or produces a sufficient immune response to provide protection. Therefore, one of ordinary skill in the art could not predict whether or not the claimed invention would be a vaccine.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-30, 62-63 and 79 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 7,018,835 ("the '835 patent"). Although the conflicting claims are not identical, they are not patentably distinct from each other because there is overlapping

subject matter between the groups of claims. Specifically, the scope of the '835 claims encompasses the scope of the instant claims. NOTE: Claims 62-63 were inadvertently omitted from this rejection in the Office Action mailed April 2, 2007.

The patented claims are drawn to a double stranded RNA (dsRNA) phage that expresses at least one genetic sequence in eukaryote cells, comprising: a cap independent translation enhancer (CITE); and at least one genetic sequence that is expressed in a eukaryote cell, wherein said CITE and said at least one genetic sequence are functionally linked and are incorporated into one or more dsRNA segments in the dsRNA. The dsRNA phage can further comprise antigens, a bioactive protein, an immunoregulatory protein, an antisense RNA, a catalytic RNA or an immunogen.

The instant claims are directed to a recombinant double stranded RNA phage (rdsRP) encoding a double stranded RNA eukaryotic expression cassette for expression in eukaryotic cells, the rdsRP comprising: at least one segment of a double stranded RNA phage (dsRP) and an internal ribosome entry site (IRES) nucleotide sequence incorporated into the at least one segment of the dsRP. The specification states that CITE and IRES are the same (see page 5, lines 19-22). The rdsRP can further comprise an adjuvant (i.e., a bioactive protein).

With regard to amplifying the rdsRP in a bacterial host as recited in the instant claims, it would have been obvious to amplify the rdsRP of the '835 patent in a bacterial host because that is the most common method used to amplify phages.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole E. Kinsey, Ph.D. whose telephone number is (571) 272-9943. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Nicole E. Kinsey, Ph.D.
Examiner
Art Unit 1648

/nk/

/Stacy B. Chen/ 9-7-07
Primary Examiner, TC1600